

Work Order ID 79535

**\*79535\***

Page 1

January-27-12 10:01:46 AM

Item ID: D4491-4

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Hinge, Right Lower

Start Date: 27/01/2012 Start Qty: 3.00

**\*3\***

Cust Item ID:

Required Date: 03/02/2012 Req'd Qty: 3.00

**\*3\***

Customer:

Reference:

Approvals:

Process Plan: M.L.JDate: 12/01/27 Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Draw Nbr

Revision Nbr

D4491

A

100

0.00

**\*100\***

Bandsaw

Jeaspa Bandsaw

Memo

CUT BLANK 5.7" LONG

0.00

110

0.00

**\*110\***

Purchasing

Purchasing

Memo

ISSUE P/O: 16016  
TO ARCHUR PRECISION(GLOBUS)  
C OF C IS REQUIRED  
CRT

0.00

120

0.00

**\*120\***

QC

Quality Control

QC6- Inspect dimensions to drawing

Memo

0.00

DAS  
16  
2-03

12/02/13

(x2)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 79535

**\*79535\***

Page 2

January-27-12 10:01:46 AM

Item ID: D4491-4 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Hinge, Right Lower  
 Start Date: 27/01/2012 Start Qty: 3.00 **\*3\*** Cust Item ID:  
 Required Date: 03/02/2012 Req'd Qty: 3.00 **\*3\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	Identify as per dwg & Stock Location: <u>110</u>	0.00				2	2	2	12/9/10
<b>*200*</b>									
Packaging	Memo	0.00							
Packaging									
210	QC21- Final Inspection - Work Order Release	0.00							13/11/14
<b>*210*</b>									
QC	Memo	0.00							
Quality Control									

mf.  
12-09-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

January-27-12 10:01:50 AM

Page 1

Work Order ID: 79535

**\*79535\***

Parent Item: D4491-4

**\*D4491-4\***

Parent Item Name: Hinge, Right Lower

Start Date: 27/01/2012

Required Date: 03/02/2012

Start Qty: 3.00

Required Qty: 3.00

Comments: IPP REV:A NEW ISSUE 12-01-27 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4491-4P		Purchased	No				Each	0.0000		3			
<b>*D4491-4P*</b>									**				
Hinge, Right Lower													
M304B3.500X03.500		Purchased	No				f	8.0000		9.157895			
<b>*M304B3 500X03 500*</b>									**				
304 BAR 3.500" X 3.500"													

Location

MAT009

120006

Loc Qty

8

8

Loc Code

9.2 ~~9.1~~ 12-01-22

12/3/28 (3)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

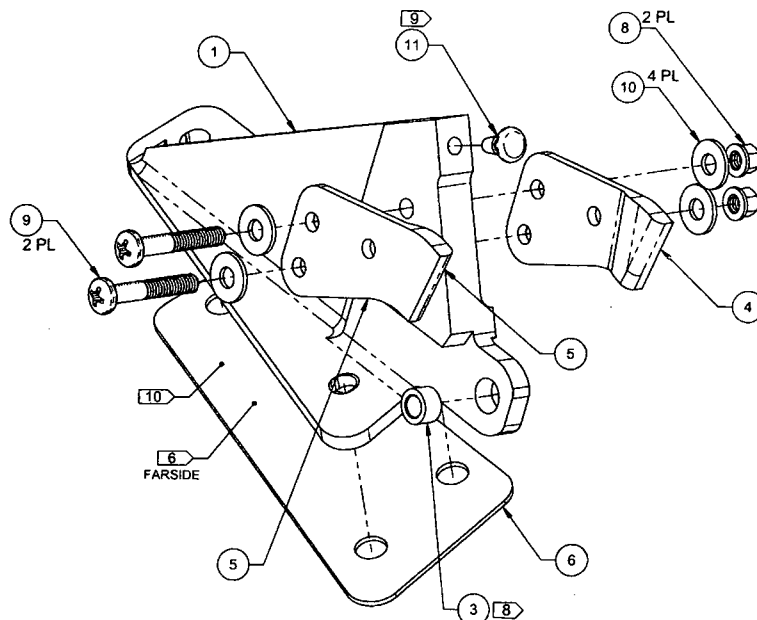
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

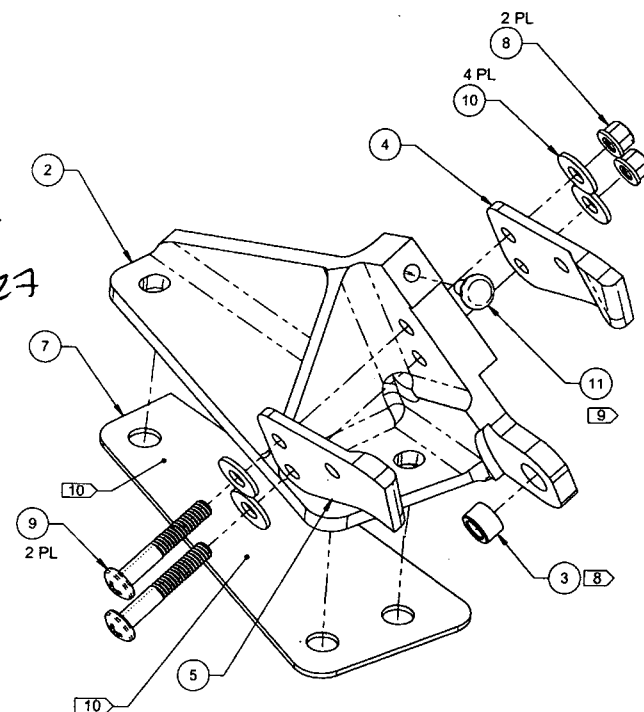
**NOTE:** Date & initial all entries

ITEM	QTY -041	QTY -043	P/N	DESCRIPTION
	X	X	D4491-041	DOOR HINGE ASSY, LEFT-UPPER
			D4491-043	DOOR HINGE ASSY, LEFT-LOWER
1	1		D4491-1	HINGE, LEFT-UPPER
2		1	D4491-3	HINGE, LEFT-LOWER
3	1	1	D4492-1	BUSHING
4	1	1	D4493-1	HINGE FORK
5	1	1	D4493-2	HINGE FORK
6	1		D4520-1	HINGE SHIM
7		1	D4520-3	HINGE SHIM
8	2	2	MS21043-08	NUT, SELF LOCKING, #8
9	2	2	MS27039C0816	SCREW, PN-HD, #8
10	4	4	NAS1149CN832R	WASHER, FL, #8
11	1	1	POF-40022	PUSH-ON FEET

RETURN TO  
 ENGINEERING  
 UNCONTROLLED COPY  
 SUBJECT TO CHANGE  
 WITHOUT NOTICE  
 WORK ORDER  
 NO. 79535 M.C.S.  
 12/01/27



**D4491-041 HINGE, LEFT-UPPER**



**D4491-043 HINGE, LEFT-LOWER**

**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI044 6.1
- 7) WEIGHT: 0.3 lbs
- 8) PRESS-FIT BUSHING INTO ITEM 1/2
- 9) SECURE USING 1357 CONTACT CEMENT (3M)
- 10) COAT MATING SURFACES WITH PROSEAL

RELEASE  
 2012-01-26

A	NEW RELEASE	RP	12.01.23
REV.	DESCRIPTION	BY	DATE
DESIGN	RP	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RP		
CHECKED	AS	DRAWING NO.	REV. A
MFG. APPR.	AS	D4491	SHEET 1 OF 6
APPROVED	AS	TITLE	SCALE
DE APPR.	AS	DOOR HINGE SETS	NTS
DATE	12.01.23	COPYRIGHT © 2012 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

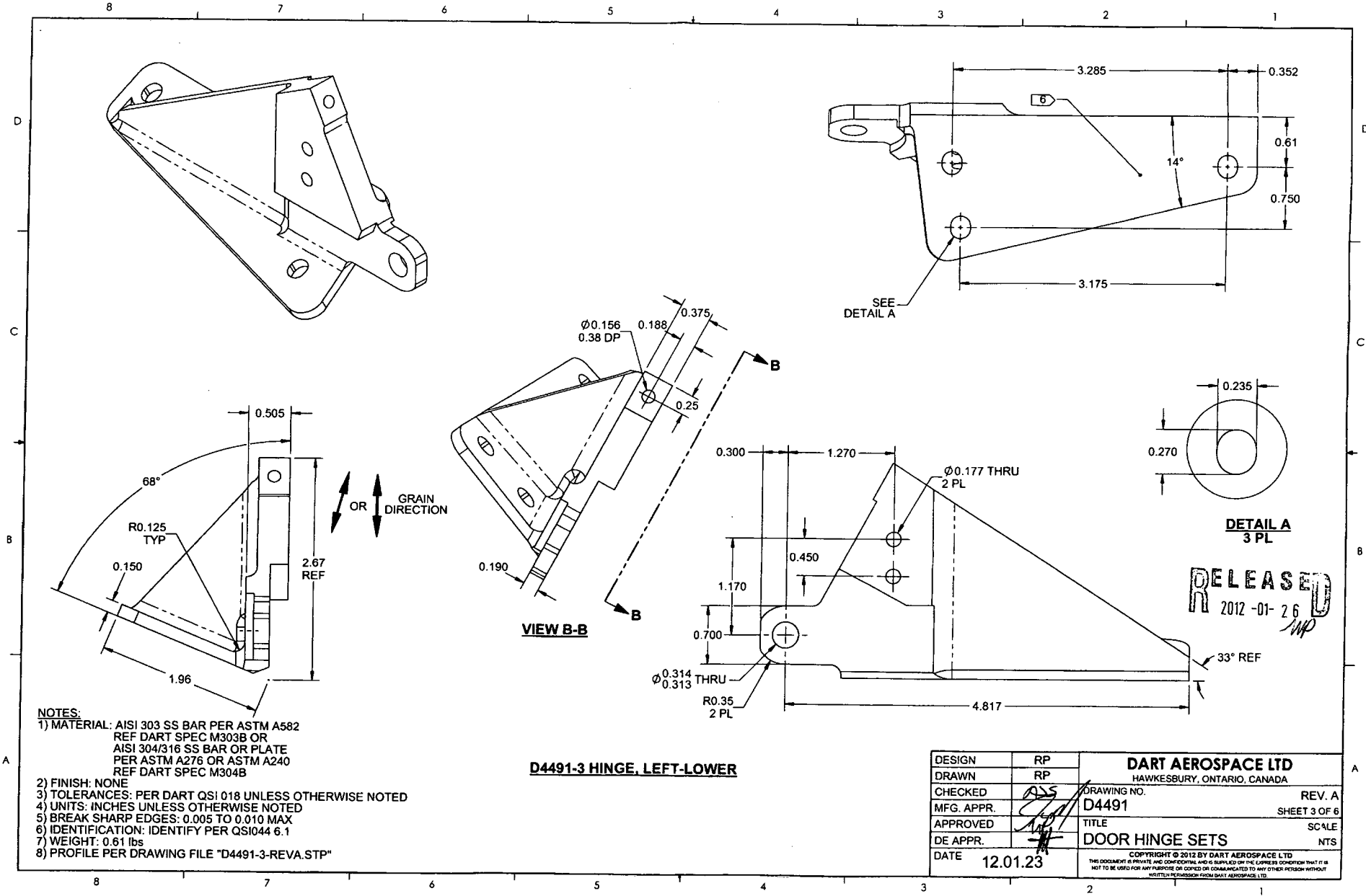
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



79538



- NOTES:**
- 1) MATERIAL: AISI 303 SS BAR PER ASTM A582  
REF DART SPEC M303B OR  
AISI 304/316 SS BAR OR PLATE  
PER ASTM A276 OR ASTM A240  
REF DART SPEC M304B
  - 2) FINISH: NONE
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: IDENTIFY PER QSI044 6.1
  - 7) WEIGHT: 0.61 lbs
  - 8) PROFILE PER DRAWING FILE "D4491-3-REVA.STP"

DESIGN	RP	<b>DART AEROSPACE LTD</b>	
DRAWN	RP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>AS</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>AS</i>	<b>D4491</b>	SHEET 3 OF 6
APPROVED	<i>AS</i>	TITLE	SCALE
DE APPR.	<i>AS</i>	<b>DOOR HINGE SETS</b>	NTS
DATE	12.01.23	<small>COPYRIGHT © 2012 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

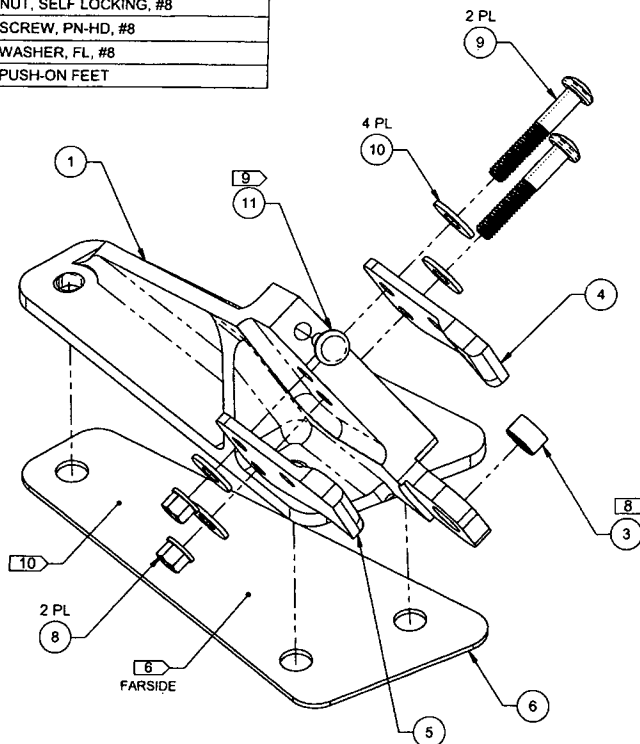
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

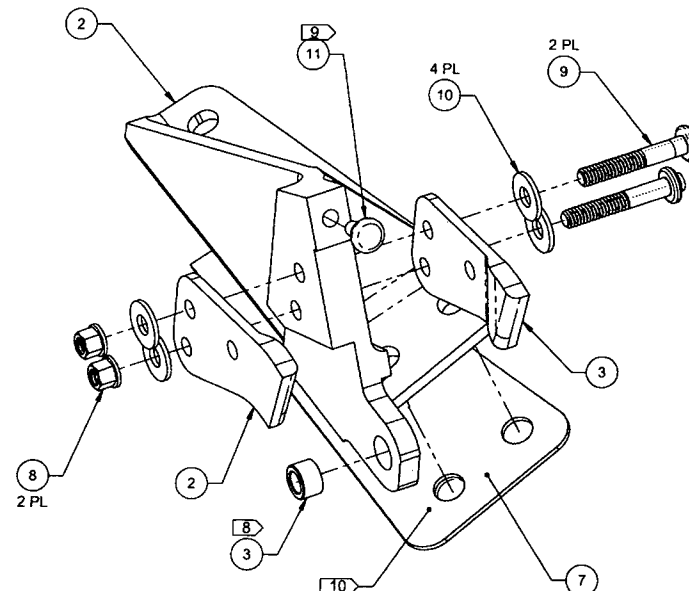
NOTE: Date & initial all entries

79838

ITEM	QTY -042	QTY -044	P/N	DESCRIPTION
	X		D4491-042	DOOR HINGE ASSY, RIGHT-UPPER
		X	D4491-044	DOOR HINGE ASSY, RIGHT-LOWER
1	1		D4491-2	HINGE, RIGHT-UPPER
2		1	D4491-4	HINGE, RIGHT-LOWER
3	1	1	D4492-1	BUSHING
4	1	1	D4493-1	HINGE FORK
5	1	1	D4493-2	HINGE FORK
6	1		D4520-1	HINGE SHIM
7		1	D4520-3	HINGE SHIM
8	2	2	MS21043-08	NUT, SELF LOCKING, #8
9	2	2	MS27039C0816	SCREW, PN-HD, #8
10	4	4	NAS1149CN832R	WASHER, FL, #8
11	1	1	POF-40022	PUSH-ON FEET



**D4491-042 HINGE, RIGHT-UPPER**



**D4491-044 HINGE, RIGHT-LOWER**

**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI044 6.1
- 7) WEIGHT: 0.3 lbs
- 8) PRESS-FIT BUSHING INTO ITEM 1/2
- 9) SECURE USING 1357 CONTACT CEMENT (3M)
- 10) COAT MATING SURFACES WITH PROSEAL

**RELEASED**  
2012-01-26

DESIGN	RP	<b>DART AEROSPACE LTD</b>	
DRAWN	RP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. A
MFG. APPR.	SWP	D4491	SHEET 4 OF 6
APPROVED		TITLE	SCALE
DE APPR.		DOOR HINGE SETS	NTS
DATE	12.01.23	COPYRIGHT © 2012 BY DART AEROSPACE LTD	
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

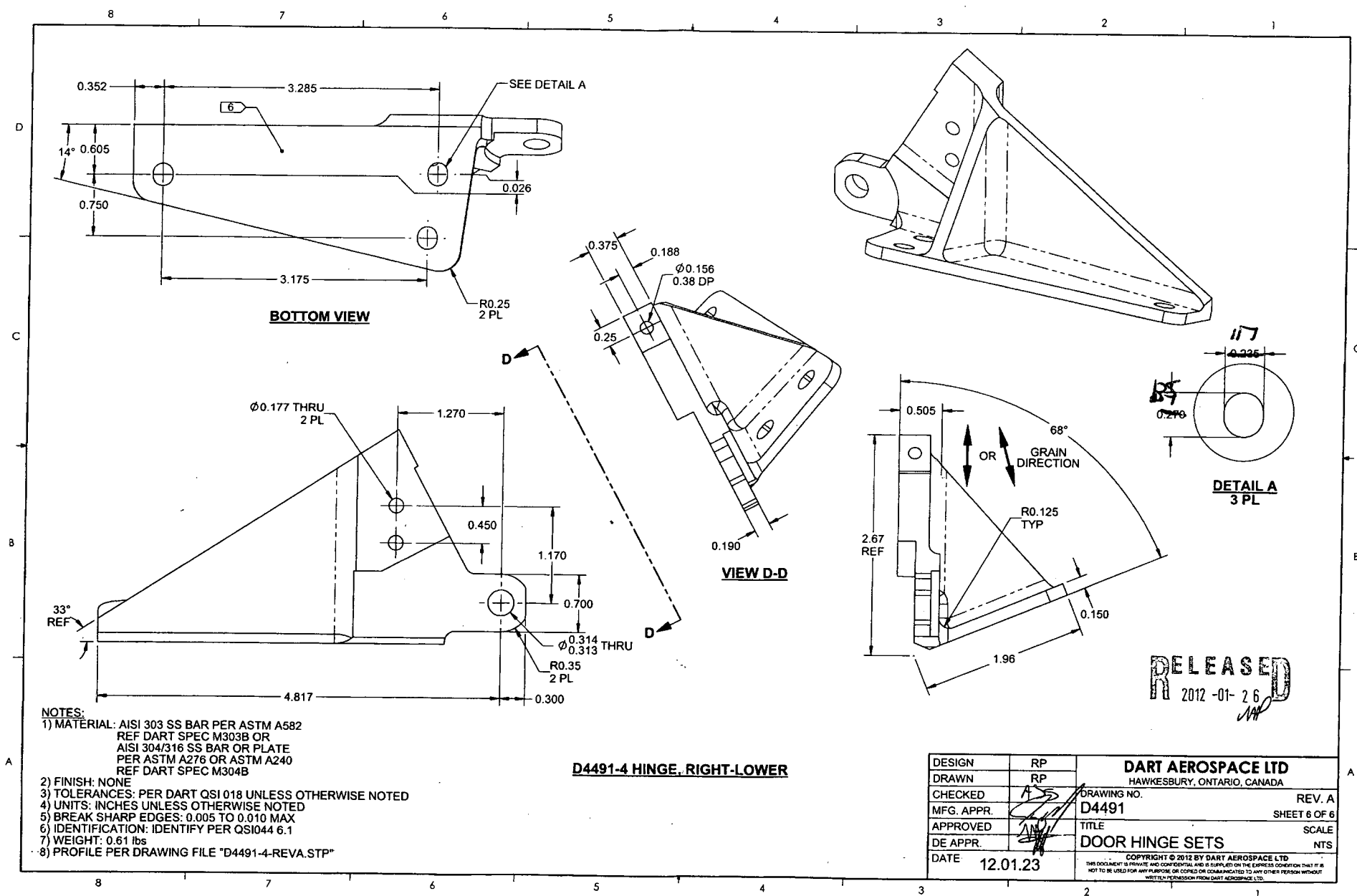
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

79535



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





1393 Major Road  
Orleans, ON  
K1E 1H3

Phone # 613-899-2405

# Packing Slip

Date	Invoice #
3/26/2012	89

Ship To
Main Finished Goods Location Dart Aerospace 1270 Aberdeen Street Hawksbury, Ontario K6A 1K7

P.O. No.	Ship	Via	FOB	Project
16016	3/26/2012	FedEx	Archer	

Qty	Item Code	Description
3	Sales	D4491-1
3	Sales	D4491-2
1	Sales	D4491-3
2	Sales	D4491-4
		HST (ON) on sales



1393 Major Road  
Orleans, Ontario  
K1E 1H3


Telephone (613) 899-2405  
Fax (613) 226-1719

## Certificate of Compliance

To:  
Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury Ont.  
K6A 1K7

Po Number	Part Number	Quantities
16016	D4491-1	3
	D4491-2	3
	D4491-3	1
	D4491-4	2

It is hereby certified that all articles mentioned above are in conformance with the requirements, specification and drawings as listed on customer purchase order number, 16016 issued by Dart Aerospace Inc.



Alex Mazerolle  
President  
Archer Precision Inc.  
1393 Major Road,  
Orleans Ontario  
K1E 1H3

## Jean-Luc Menard

**From:** Alex Mazerolle <Alex@archerprecision.ca>  
**Sent:** Wednesday, April 25, 2012 8:30 AM  
**To:** Jean-Luc Menard  
**Subject:** Re: D4491's scrap parts

Good morning Jean-Luc,

Two of the hinges had an end mill that pulled out of its holder. The last hinge was scraped because we lost the transmission on the machine and could not finish the part.

Alex Mazerolle  
President  
Archer Precision Inc.  
[Alex@archerprecision.ca](mailto:Alex@archerprecision.ca)  
613-899-2405

----- Original Message -----

**From:** Jean-Luc Menard  
**To:** Alex Mazerolle  
**Sent:** Monday, April 23, 2012 2:03 PM  
**Subject:** FW: D4491's scrap parts

---

**From:** Jean-Luc Menard [<mailto:jmenard@dartaero.com>]  
**Sent:** Monday, April 02, 2012 10:28 AM  
**To:** Alex Mazerolle  
**Cc:** Eric Downing ([edowning@dartaero.com](mailto:edowning@dartaero.com))  
**Subject:** D4491's scrap parts

Hi Alex,

Could you send me an quick e-mail with what happened to the scrap hinges pls.

QC is asking so we can attach the e-mail for their records.

THX

JL

**Jean-Luc Menard**  
**Production Engineering Coordinator**



DART AEROSPACE  
1270 Aberdeen Street  
Hawkesbury Ontario  
Canada K6A 1K7  
**Tel: (613) 632-5200 Ext 227**  
[jmenard@dartaero.com](mailto:jmenard@dartaero.com)



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DART AEROSPACE LTD		Work Order: MS35
Description: Hinge, Right Lower		Part Number: DHP.4
Inspection Dwg: DHP.4 Rev: A		Page 1 of 2

### FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.352	± 0.010	0.357	✓		V	
3.285	± 0.010	3.289	✓		V	
0.026	± 0.010	0.027	✓		V	
RO.25		RO.25	✓		S	
3.175	± 0.010	3.174	✓		V	
0.750	± 0.010	0.752	✓		V	
0.605	± 0.010	0.610	✓		V	
14°	± 5	14°	✓		S	
0.375	± 0.010	0.370	✓		V	
0.188	± 0.010	0.189	✓		V	
Ø 0.156	± 0.005	0.155	✓		V	
0.38 Dip	± 0.030	0.39	✓		V	
0.25	± 0.030	0.254	✓		V	
0.190	± 0.010	0.1905	✓		V	
2.67 Ref	± 0.030	2.678	✓		V	
1.96	± 0.030	1.955	✓		V	
0.150	± 0.010	0.152	✓		V	
0.505	± 0.010	0.504	✓		V	
RO.125		RO.125	✓		S	
0.25/0.20	± 0.006	0.25/0.25	✓		V	
Ø 0.171	± 0.005	0.182	✓		V	
1.213	± 0.010	1.276	✓		V	
0.450	± 0.010	0.452	✓		V	

Measured by: SMB	Audited by:	Preliminary Approval:
Date: 12-8-13	Date:	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	





